# The Economics of an Audit Frm

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# THE ECONOMICS OF AN AUDIT FIRM: THE CASE OF KPMG IN THE NETHERLANDS

This study focuses on the organizational form of an audit firm. In contrast to most studies in this field, an incomplete contracting view on the audit firm is adopted. Central to the study are the allocation of residual control rights, performance measurement, and reward and punishment systems of the organization. Contracting theory implies that the assets of a relationship determine the optimal allocation of residual control rights. Employing the notion of 'fit', some conclusions are drawn regarding the performance measurement and reward systems. The theoretical analysis is applied to a case study of a Dutch audit firm: KPMG.

**Key words:** Audit firm; Partnerships; Profit sharing

'Very little time has been spent on studying the audit firm as an organizational form, and relatedly, the governance of them' (McNair, 1991). The governance of audit firms was identified as a research opportunity in auditing (Abdel-khalik and Solomon, 1989), but this does not seem to have buttressed the study of control systems in the organizational context of audit firms. The organizational form of audit firms was explained in terms of the incentives it provided to auditors to be competent and independent (Watts and Zimmerman, 1986). It has been said that audit firms have evolved as unlimited partnerships because this maximizes the amount of assets available as collateral bond for independence and competence. Moreover, unlimited liability encourages mutual monitoring between auditors, and thus provides a guarantee for service quality (Fama and Jensen, 1983a). This line of explaining an audit firm's organizational form views an audit firm as a signalling device. In order

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to keep the audit market from collapsing owing to adverse selection problems, i.e., because customers are imperfectly informed about service quality (Barzel, 1982), the firm has to signal its quality. Moreover, since an audit firm is, owing to the proximity of the partners and their specific knowledge about market conditions, better informed about the quality of auditors, it is more efficient to let the audit firm select auditors who are subsequently employed by a client hiring an audit firm, than to let a client employ individual auditors directly. Thus, the audit firm serves as a screening device.

This explanation of the prevalence of partnerships in the audit market is not completely convincing, mostly because the survival of the organizational form hinges on the legal characteristic of unlimited liability. Empirical evidence suggests that liability is being increasingly limited. For example, the Dutch members of KPMG and Coopers & Lybrand were recently incorporated to shield them from litigation exposure. Ernest and Young’s Dutch office is organized as a partnership of companies with limited liability. Hence, the omnipresence of partnerships cannot be explained completely by means of its unlimited liability. Although unlimited liability doubtlessly plays a role in providing a guarantee for independence and competence, and encourages mutual monitoring, it seems not to be the sole factor in deciding for a partnership construction.

The literature suggests other motives for the partnership form. Gaynor and Gertler (1995) and Lang and Gordon (1995) investigated the role of partnerships in providing insurance against idiosyncratic shocks to the human capital of the employees. Here, the partnership works as a risk sharing device. In order to shield partners from unsystematic risk, income has to be shared equally among partners (Gilson and Mnookin, 1985). Sharing income equally seems to be a very important attribute of partnerships, both in practice and in theory. Farrell and Scotchmer (1988), for example, defined a partnership as a coalition that divides its output equally. Kandel and Lazear (1992) argued that a partnership is a team in which all members are residual claimants, although their profit shares do not have to be the same. The partnership form was also suggested because it facilitates the supply of teams for complex cases (in which joint production is necessary). Moreover, (capital) cost sharing might be an additional reason for a partnership (Russell, 1985).

To define a partnership as either an insurance device, or an incentive system seems also to be insufficient in that a hierarchy can provide these functions. In fact, Williamson (1975) argued that hierarchy dominates partnership since it has superior bounded rationality properties, better control instruments to monitor behavior, and it offers risk-bearing advantages. Williamson (1975, 1985) analyzed organizational forms in terms of their governance characteristics. His methodology is adopted in the present study. More specifically, an incomplete contracting perspective on the audit firm is taken (Grossman and Hart, 1986; Hart and Moore, 1990). It is argued that the critical organizational rules of the game that determine performance are the allocation of decision rights and the performance measurement and reward systems of an organization (Jensen and Meckling, 1992). If a partnership is an efficient form, then its survival should be explained by the advantages of its residual control right allocation (and performance measurement and incentive systems). Here, a partnership is defined as the organizational structure in which the residual control rights on the use of the assets rest with (a subset of) the joint agents working in the organization. Thus, the agents are in joint assembly empowered to revise or terminate contractual relationships stipulating the rules of using the asset. These decisions might be made either by majority or unanimity rule. Agents can only sell their rights to the other owners, i.e., they cannot sell their rights to outsiders; nor are they allowed to take their rights with them when they leave the organization. This definition closely resembles Hart and Moore’s (1990) concept of partnership. They, however, imposed a majority rule, and ruled out the case of unanimity. If all agents in a firm have residual control rights, then the partnership will be equal to a workers’ cooperative, in this view. The organizational mode is thus explained by the efficiency of the gover nance structure choice.

In incomplete contracting theory, an audit firm can be characterized by the main assets used in its operations. It will be argued that a ’brand name’ and ’specialized knowledge or human capital’ are paramount in an audit firm. Owing to the economic dependencies of these main assets, the inalienability of the human assets and the hold-up problems with regard to the investments of the employees, it will be argued

that the governance structure of a partnership is efficient, since it facilitates cooperation between auditors, and thus increases the value of the investment in the main assets.
The main research objectives, then, are to identify the way in which decision rights are allocated in an audit firm, and given this governance choice, what performance measurement and reward systems fit the allocation. With regard to the efficient incentive system, it will be argued that the assets characteristics suggest a sharing rather than marginal product reward system. In other words, the performance evaluation system should not translate differences in performance into different rewards.

In the audit firm investigated, KPMG, the most important employees (the partners) hold the residual control rights. Owing to the size of the firm, postcontractual opportunism may be expected. Essentially, postcontractual behavior is controlled by two mechanisms: mutual monitoring and the separation of decision-management and control rights. It will be shown that the nature of KPMG's assets and KPMG's governance choice support these mechanisms. With regard to the performance measurement and reward systems, KPMG employs a sharing system at the partner level, although a shift towards a marginal product approach can be observed. At the nonpartner level of the audit branch at KPMG, a strict up-or-out policy is the most important aspect of the performance evaluation system.

The research questions are first addressed in Section 2 at a theoretical level using economic contracting theory. The application of incomplete contracting theory is relatively new in accounting and auditing research (cf., Jensen and Meckling, 1992; Wruck and Jensen, 1994, and Demski, 1995), and thus the main results are reviewed to some extent. The research methods applied in the empirical part of this study are described in Section 3. In addition, the case study research questions are discussed. Subsequently, Section 4 contains a case study report of a successful Dutch audit firm, KPMG the Netherlands. Some concluding remarks are made in Section 5.

## *2. Economic contracting theory and the audit firm*

### *2.1 Markets and hierarchies*

The research questions pertain to the governance choice of audit firms. This choice is analyzed by adopting an incomplete contracting perspective on the firm. In economic contracting literature, the governance of contractual relations is studied (Williamson, 1993). In the incomplete contracting branch of this literature, it is supposed that, due to complexity considerations, it is (prohibitively) costly for agents to specify in advance a comprehensive long-term contract to govern the terms of the relationship. Moreover, it is supposed that agents behave opportunistically (Williamson, 1985), the contract is subject to renegotiation later on. The incompleteness of contracts causes ex post bargaining problems (transaction costs) in situations where agents make irreversible investments, i.e., choose assets which have a higher value within the relationship than outside it. Such assets are said to be *specific*. An investor's bargaining power and share of the ex post surplus may be insufficient to compensate the costs of the ex ante investment. Since the contractual terms are incomplete, the other party may behave opportunistically in unforeseen situations, and thus expropriate part of the value in ex post bargaining (hold-up problem). As a result, the investor, anticipating the postcontractual behavior of the other party, will choose the investment inefficiently. That is, he will not invest in the highest surplus generating project.

Incomplete contracting theory holds that the incentives to invest in a relationship depend on the governance structure. The main result of the theory is that the governance structure should be chosen to minimize the distortions in investment decisions caused by ex post bargaining problems. Two extremes on a continuum of possible governance structures are described in incomplete contracting theory: markets and hierarchies. Governance structures can be described as systems of attributes in which attention is paid to incentive intensity versus administrative controls and autonomous versus cooperative adaptations (Williamson, 1993). Accordingly, markets are characterized by high-powered incentives which help to keep bureaucratic costs in check and support strong autonomous adaptation.[1] Hierarchy, by contrast, has much weaker incentives and greater bureaucratic costs, but has a superior ability in cooperative adaptation respects. The cost M(**k**) of governing contracts via the market are assumed to be relatively small if the specificity of assets **k** is low. Likewise, the governance costs of a hierarchy H(**k**) will be relatively high if asset specificity is low, since instead of relying on the high-powered incentives and autonomous adaptation of the price system, administrative controls have to be designed to guide transactions. If asset specificity is high, ex-post bargaining problems might be circumvented if the right to decide in circumstances other than specified in the initial contract is allocated to somebody. This, in fact, represents a hierarchy. The holder of these residual control rights is said to be the owner of the assets (Hart and Moore, 1990).

Figure 1 provides a graphical illustration of these ideas. The governance costs of a hybrid organization X(**k**), such as franchises and joint ventures, are between those of hierarchy and market governance. Hybrids rely more on autonomous adaptation than hierarchies do, but they also apply more administrative controls than markets do.

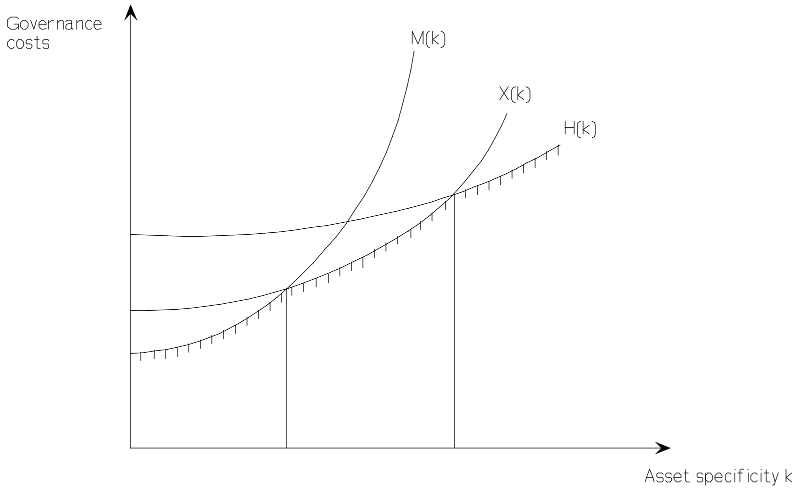


Figure 1: governance structure and asset specificity
Source: Williamson (1991)

*2.2 Different forms of hierarchies*

Depending on the allocation of the residual control rights (ownership), different forms of hierarchies may arise. Changes in ownership affect the incentives of the agents involved. Two ownership systems are defined to gear the analysis to the audit firm: partnership (P) and the conventional firm (CF). In a partnership, the residual control rights rest with the joint auditors, that is, single partners may not decide on the use of an asset on their own. A distinction is made between a P with a majority rule ($P_m$), and a P with a unanimity rule ($P_u$). In a conventional firm, the residual control rights are said to rest with a single owner. The single owner employs auditors and grants them access to the firm's assets. Consider the simple case of three auditors. In P, under unanimity, all three auditors have to agree on the use of an asset, while under a majority rule, a joint decision of two auditors suffices. In a CF, one auditor will decide, and the others may use the asset if the owner grants them access. Figure 2 summarizes the difference between the $P_m$, $P_u$, and CF organizational modes. The definition of the three ownership structures is completed in subsequent sections of this paper.

| ownership structure | CF | $P_m$ | $P_u$ |
|---|---|---|---|
| number of residual control rightholders necessary to make decisions | one | >50% | all |

Figure 2: ownership structures

Notice that the probability that access to the assets is granted differs among the ownership structures.

Recall that ownership is defined as the residual control right over assets. Hence, it is relevant to pay attention to the assets employed in audit firms. The analysis will be stylized to some extent in order to focus on the main issues.

*Brand name capital*

In the audit market, there are significant problems of quality uncertainty. Prices provide little guidance to measure quality, especially since competition is fierce.

When audit quality is uncertain and the quality information costs are much greater for consumers than producers, decisions to engage an auditor are apt to be made based on reputation (Getzen, 1984; Barzel, 1982). Auditors deviating from an agreed upon level of quality are punished by a loss of expected future business. The information asymmetry between auditors and clients also holds over time. Ex post evaluation of services might be difficult if the client is not very sophisticated concerning auditing. Even if a client has considerable knowledge of auditing, a lack of quality might only be revealed slowly, as undetected contract breaches become known. Instead of measuring quality ex ante, a client can use the identity of the auditor to determine quality. Thus, clients depend upon established reputations and are willing to pay a premium for brand name quality service (Getzen, 1984). It is argued that audit firms have to signal their reputation through investment in brand name capital. Such investment includes advertising, expenses associated with the solicitation of new clients, accumulation of satisfied clients, fulfillment of commitments including the punishment of auditors providing too little effort, in-house nonbillable work (for example, writing articles for professional journals)(Carr and Mathewson, 1990).

Existing client relations, especially with leading companies, serve as an important referral to convince potential clients of the quality of the audit firm. Audit firms may signal quality assurance by supplying multiple services under the same brand name (KPMG, C&L, Price Waterhouse), as most big audit firms do. Effectively, their entire reputation of quality is pledged for each and every service supplied. The substantial investments in communicating a firm’s brand name are a firm-specific asset. It should be noted that a firm’s brand name is an alienable asset: it can be bought and sold, somewhat like a capital asset (Getzen, 1984).

In short, the more important the adverse selection problem in the audit market, the higher the importance of brand name investments. Clients are willing to pay a premium for services provided under such brand names since it reduces their uncertainty.

*Human capital*

Auditors need skills and knowledge (human capital) to perform their activities. This human capital is general purpose (Russell, 1985), investing in audit knowledge improves an auditor's productivity when working for any possible employer. By performing his job well, an auditor is likely to inspire trust and loyalty in his clients. He will over time learn the needs of the firm's customers, and he will acquire specialized knowledge about particular markets and clients in the course of his work. This specialized knowledge is a firm-specific asset which is inalienable to the auditor. There is little reason for auditors to make such investments, however, since they can be held up by the firm. Moreover, the firm itself will only benefit (substantially) from the investment in specialized knowledge if the auditor stays with the firm for an extended period. Since specialized knowledge is inalienable, the auditor is likely to overinvest in his general-purpose human capital which increases his market value. Underinvestment is expected for the specialized knowledge of the firm's customers. Thus, the firm is apt to provide incentives that discourage turnover, and 'weave seasoned employees into the very fabric of the firm' (Russell, 1985, p. 233). In addition, the audit firm will provide incentives for seasoned employees to accumulate specialized knowledge.

### *2.3 Towards a fitting governance structure.*

The description above allows a first characterization of the audit firm. An audit firm is said to be a set of alienable and inalienable assets. Obviously, this characterization is very incomplete. It is relevant to add the ownership structure to the characterization. The choice is between a CF or a P structure. The general principle of residual control right allocation was formulated in Section 2.1: ownership should be structured with a view to minimizing the distortions in investment decisions caused by ex post bargaining problems. Because of their influence on asset usage, residual control rights affect ex post bargaining power and the division of ex post surplus in a relationship. This division of surplus, in turn, will affect the agent's incentive to invest in the assets necessary for a contract (Hart, 1989). Residual control over an organization's assets influences the behavior of agents. Since the residual control right includes the right to exclude someone's access to an asset, the threat of excluding one's access prevents adverse behavior. To illustrate this point, auditors might face the threat of being excluded from using the firm's brand name (KPMG), e.g., because they jeopardized the firm's reputation for quality by performing badly. Hence, they have an incentive to provide sufficient effort.

Since an auditor's specialized knowledge and general purpose knowledge are inalienable assets, the residual control rights on these assets rest with the auditor. The investments an auditor makes in his general purpose human capital are likely to contribute to his value on the auditor labor market. Thus, if anything, the auditor will have an incentive to overinvest in his general purpose capital. Owing to the hold-up problem, an auditor will not invest sufficiently in specialized knowledge. This knowledge is, by definition, less valuable outside the firm than inside it. Were the asset alienable, the auditor would be able to sell the asset if he terminated his employment with the firm. If the audit firm could make a credible commitment to pay a sufficient amount for this asset, the underinvestment problem would not be so great. The underinvestment problem is aggravated, however, because the audit firm has little incentive to stimulate employee investment in specialized knowledge, since each employee may leave the audit firm. Indeed, the firm itself faces a hold-up threat.

Consider the alienable asset brand name. If a conventional firm governance structure is applied, auditors employed by the owner will have little incentive to invest in the establishment of a brand name, since it is probable that they will not be able to capture the proceeds from this investment. The owner foreseeing the behavior of his employee will probably compensate the underinvestment of the employee by overinvesting in the asset himself. Thus, distortions in investment decisions are likely to occur in conventional firm governance structures. Suppose partnership is applied with regard to the alienable assets. Then, all auditors/owners will have an incentive to invest in the alienable asset, since all capture the proceeds and, in addition, will have the right to exclude the other auditors from using the asset if they underinvest in the asset. One of the most important costs to uphold a firm's reputation is the time invested in mutual monitoring. Moral hazard issues arise since auditors are more knowledgeable about their services than clients. Quality can be guaranteed by monitors who are just as informed as the auditor in supplying the service. Other auditors in the firm are probably good agents for performing the monitoring function. In order for this monitoring arrangement to work as a guarantee against moral hazard, the monitor's self-interest should coincide with the client's. If monitors own the brand name capital that is at risk if auditors do not deliver their professional services honestly, then they will have sufficient incentive to perform their peer review tasks. Otherwise, the monitor may freeride on the monitoring efforts of others (Carr and Mathewson, 1990).

The benefits of partnership are increased by the economic dependencies between the inalienable and alienable assets. Economic dependencies or complementarity of assets is said to exist if increasing one asset raises (or at least: does not decrease) the marginal profitability of any other asset in the organization (Milgrom and Roberts, 1995). It is argued that the alienable and inalienable assets important in an audit firm are strongly complementary. For example, an auditor building on his specialized knowledge by improving personal relations with clients adds to the reputation of the organization as a whole. Moreover, auditors are always implicitly or explicitly engaged in sales. The entrepreneurial aspects of the auditor's work are important. By performing his job well, an auditor not only adds to his reputation but may also convince clients to become permanent customers of the firm. Thus, it seems reasonable that the main assets of the firm are indeed strongly complementary. In other words, the auditor's expected payoffs on his inalienable assets will strictly increase if he can use the firm's assets, i.e., if he can provide services under the firm's brand name. If the complementarity is sufficiently strong, it may facilitate a near-optimal investment in the alienable asset. Agreements on investment levels will have to be credible to work, i.e., the punishment for deviant behavior must outweigh the potential benefits. When all agents have to agree on the use of the firm's assets, maximal punishment is provided for deviant behavior. The brand name (alienable) may be owned jointly, which provides the opportunity of excluding a deviating auditor's use of the brand name. This, in turn, implies that the auditor will earn less on his human capital (inalienable). Since human capital and brand name are strongly complementary, the decrease in the auditor's expected payoffs will be significant. It is then possible to infer which decision rule is expected to be applied in partnerships. Maximal punishment is provided by the unanimity rule since the probability of excluding defecting auditors is greatest (Halonen, 1994). A well-known result from voting theory is that the unanimity rule is the only voting rule certain to lead to Pareto-preferred decisions (Buchanan and Tullock, 1962). However, since it is time-consuming and encourages strategic behavior, it is expected it will only be used in the firm's key decisions, such as the access decision to assets. Otherwise, simple majority rule is preferred.

In fact, the provision of an efficient level of investment is secured by separating the ownership of complementary assets: specialized knowledge and brand name. A hostage-type solution (Williamson, 1983) to the investment problem arises which is facilitated by the partnership governance structure.

At this point, it is possible to complete the characterization of an audit firm. An audit firm is a set of strongly complementary alienable and inalienable assets of which the residual control rights are owned by the individual auditor (inalienable assets) and the auditors in joint assembly (alienable assets), and where decisions are made by unanimity rule. Note that the partnership structure is efficient because of the complementarity of assets and the application of the unanimity rule. This suggests that there is a level of complementarity of assets $\mathbf{k_z}$, where $H^{Pu}(\mathbf{k}) < H^{CF}(\mathbf{k})$ $(k>k_z)$, where $H^{Pu}$, the cost of partnership governance with unanimity rule, and $H^{CF}$, the cost of conventional firm governance (Halonen, 1994). Figure 3 summarizes this point.

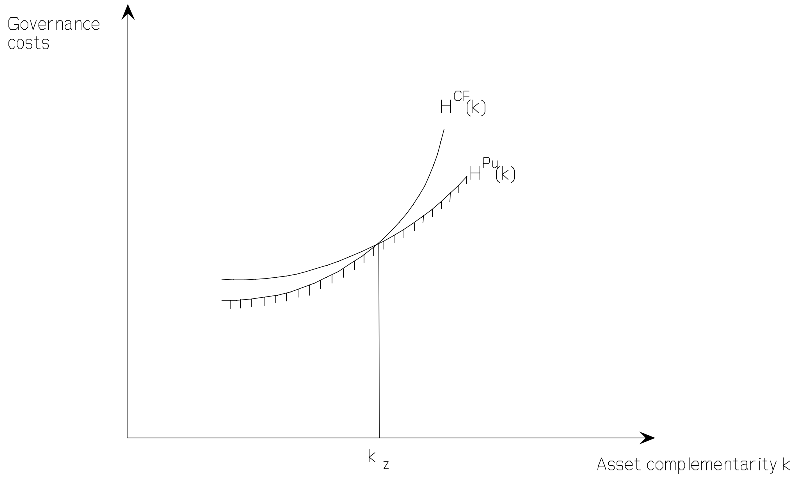

Figure 3: ownership structure and asset complementarity

*2.4 The incentive system of audit firms*

Ownership of assets does not necessarily imply that residual control holders are also residual claimants (Hart, 1989). Thus, the audit firm has to make choices regarding the design of an incentive system. Holmstrom and Milgrom (1994) argued that there are two alternative systems for managing incentives in an organization. Each system employs several instruments. Moreover, they claimed that the levels of incentives provided for different activities of workers tended to be complementary. They defined the incentive system 'employment' in which the firm (a boss) owns the firm's assets, there are weak incentives for measured performance (fixed compensation), and the worker faces considerable restrictions on activities. Conversely, 'ownership' is an incentive system in which the worker owns the firm's assets, incentives are strongly output-based, and the worker may freely choose between activities. These incentive systems closely resemble conventional firm and partnership governance, respectively. According to Holmstrom and Milgrom (1994), the exogenous variable determining the appropriateness of each system is the cost of measuring performance. If the cost of measuring performance is high, an 'employment' system will be more likely than an 'ownership' system.

In the introduction, it was argued that an audit firm works as a screening device since it has superior monitoring capabilities. The partners in an audit firm have the skills and knowledge to review the effort and performance of their colleagues. Thus, it may be concluded that measurement costs in an audit firm are modest. With auditors having to allocate their time between billable work and nonbillable work such as soliciting new clients, the ownership incentive system grants the worker sufficient freedom to pursue both activities, while the employment system restricts the worker to just one of these.

Similar to the results of the transaction cost analysis, the measurement approach is summarized by Figure 4.

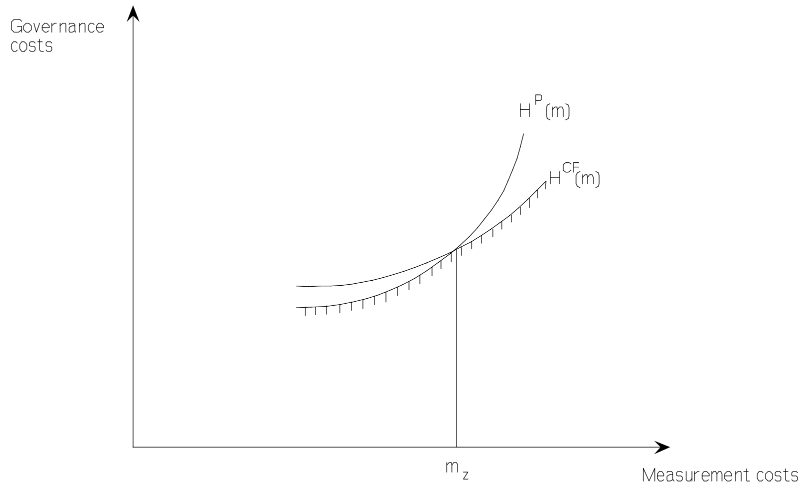


Figure 4: ownership structure and measurement costs

In Figure 4, **m** represents the measurement costs, $H^{CF}(m)$, and $H^P(m)$ represent the costs of conventional firm and joint ownership governance as a function of measurement costs **m**. It is argued that there is a level of measurement costs $\mathbf{m_z}$ where $H^P(\mathbf{m}) > H^{CF}(\mathbf{m})$ $(m>m_z)$.

The distinction between the two governance forms, ’conventional firm’ and partnership, can now be described more fully. Figure 7 provides the attributes of each form. These attributes are, arguably, strongly complementary (Holmstrom and Milgrom, 1994).

| governance system | worker ownership | metering costs | performance based rewards | multiple tasks | asset complem-entarity |
|---|---|---|---|---|---|
| partnership | yes | low | yes | yes | high |
| conventional firm | no | high | no | no | low |

Figure 4: conventional firm versus partnership governance

The characterization of the audit firm can now be completed. An audit firm is a set of strongly complementary alienable and inalienable assets that are owned by the individual auditor (inalienable assets) and the joint assembly of auditors (alienable assets) under unanimity rule. The audit firm operates as a screening device by mutual monitoring and specialized knowledge of the partners and the measurement costs of performance are modest. Incentives are performance based, and the auditor has considerable freedom in pursuing the tasks he is assigned to.

### *2.5 The reward system of audit firms.*

Reward systems differ in the extent to which they base rewards on the contribution to the marginal product of the firm, i.e., the extent to which they base payment on performance. This choice is the heart of the organizational form problem. Although it has just been argued that a performance-based reward scheme is complementary to partnership governance, the literature (Gilson and Mnookin, 1985; Carr and Mathewson, 1990; Farrell and Scotchmer, 1988) suggests that one of the striking attributes of many partnerships is (a seniority-based) income-sharing system, in which the contribution to the firm's marginal product is not discounted. Thus, an explanation is needed in order to understand this discrepancy.

One reason for agents to join an audit firm may be the gains offered by diversification (Gilson and Mnookin, 1985). One of an auditor's most important assets is his human capital. However, human capital is difficult to diversify; hence, the auditor is exposed to unsystematic risk. An audit firm (by facilitating specialization) provides an opportunity for diversification. For example, specialization in an industry exposes an individual auditor to substantial (business cycle) risk which is unsystematic and, therefore, unrewarded. An audit firm which has a sufficiently large number of specialists in different industries, and in which income is shared, reduces the unsystematic risk the auditor faces.

If earnings are shared equally, an agent's income depends on the firm's total earnings, and he will act in the interest of the firm. The auditor will divide his time optimally between maintaining his own quality, monitoring others, and soliciting new clients. The problem is, however, that although profits are maximized the amount of effort provided may fall short since at the margin the auditor gains only a fraction of the profits he generates for the firm, and this fraction decreases if the firm grows (Getzen, 1984). A reward scheme based on performance gives the auditor the incentive to maximize his own revenues. Performance-based rewards provide little incentive for spending time on such nonbillable activities as mutual monitoring. Thus, mutual monitoring will tend to be more institutionalized, since it is essential to ensuring quality and effort. It is also tempting to cheat on promised quality in the audit work rendered. In addition, the marginal productivity approach creates an incentive for individual auditors to overinvest in their human capital at the expense of the firm's brand name. Again, the reason is that the payoffs of investments in their human capital do not have to be shared, while contributions to the audit firm's brand name profit all partners.

On the other hand, the sharing reward scheme results in ex post bargaining problems. An agreement to diversify in order to secure a stable income creates an incentive to renege to the party which is unhurt if the event that imposes uncertainty evolves. Two forms of ex post bargaining might be pursued by auditors unhurt by the formerly uncertain events: grabbing, i.e., demanding more than the original share bargain, and leaving, i.e., withdrawing services from the firm (Gilson and Mnookin, 1985). It is argued that the creation of firm-specific capital constrains grabbing and leaving, thereby providing the glue that holds together an organization committed to the sharing model (Gilson and Mnookin, 1985; Getzen, 1984). Consider that returns to firm-specific assets are available only so long as employees remain within the firm. One source of a firm-specific asset is the alienable asset discussed earlier the audit firm's brand name.

Kandel and Lazear (1992) showed that a sharing system provided the best incentives for peer pressure. The shares of income do not, however, have to be equal. The absence of peer pressure, in particular in larger firms, increases freerider problems in the effort and quality of audit work. Thus, the larger the firm, the more institutionalized mutual monitoring will become.

In conclusion, it is predicted that increases in the value of brand name (thus, increases in audit market quality uncertainty) are likely to enhance the use of a sharing system.

In the introduction, is was claimed that the audit firm works as a screening device to determine the quality of auditors. However, the audit firm itself will not be completely capable of ascertaining the quality of an auditor. Therefore, audit firms employ a promotion system in which the lower ranks receive relatively little pay. As the quality of an auditor is slowly revealed over time, good auditors will be compensated for their ’underpayment’ as juniors by the share they receive as partners. The underpayment also serves to tie successful auditors to the firm, since they will only receive pay according to their marginal productivity in the long run. Such investment is likely to be prohibitively costly to defecting auditors since they will be revealed as unsuccessful auditors, and thus will never become partners. This yields an additional prediction: increases in the value of brand name will extend the membership hierarchy by increasing the compensation of partners relative to new entrants. Indeed, an increase in the value of brandname investments lead to a need for better protection, and thus the screening function of the audit firm is expected to increase in importance. The investment prospective members of the firm will have to make will rise in order to meet the demands set in this screening.

Summarizing, Jensen and Meckling (1992) suggested that the organizational problem must be solved by designing a set of rules of the game for the firm, which firstly partition out the decision-making rights to the agents throughout the organization. Therefore, the main research aims are to identify the way in which decision rights are allocated in an audit firm, and to identify the fitting performance measurement and reward systems. It appears that the activities of auditors demand the allocation of the residual control rights to them. In effect, the result is a partnership governance system. The activities referred to are characterized by the needs of specific inalienable and alienable assets which are economically dependent, the modest costs of measuring performance, and the fact that activities encompass multiple tasks.

Secondly, a control system has to be created to ensure proper use of the decision rights. One of the main elements of this control system is the incentives that are provided. It appears that an incentive system based on sharing contributes most to the goals of an audit firm.

## *3. Hypotheses and research methods*

The primary aim of the study was to analyze the important organizational aspects of effective audit firm operations. An economic contracting perspective was adopted to increase understanding of the economics of audit firm governance. The purpose was to identify the critical economic and organizational components that contribute to the success and failure of governance choices in audit firms.

A number of hypotheses were derived from the analysis of Section 2. Three sets of hypotheses were distinguished. First, some inferences were made regarding the governance system audit firms are likely to adopt. These hypotheses were based on the findings of Section 2.3.

**H1a:** *If the value of brandname investments of audit firms increases, a partnership governance system will more likely be enstated than a conventional firm governance system.*

**H1b:** *If an audit firm employs a partnership governance structure,*

- *unanimity rule will more likely be used to decide on the access to and employment of the main assets.*
- *simple majority rule will more likely be used for all other joint decisions.*

Second, it was found that mutual monitoring is important in guaranteeing quality and effort in audit work. The following hypotheses, based on Sections 2.3, and 2.5, relate mutual monitoring to audit firm size, ownership, and reward system.

**H2a:** *If the audit firm size increases, mutual monitoring arrangements will more likely be institutionalized.*

**H2b:** *If mutual monitoring is important for guaranteeing quality and effort, a sharing reward system will more likely be employed.*

**H2c:** *If the value of the brandname investments increases, the agents performing the monitoring function will more likely be the owners of the brandname.*

Third, the role of brand name investments were linked to the reward system of audit firms. The hypotheses were established in Section 2.5.

**H3:** *If the value of the brandname investments increases,*

- *a sharing reward system will more likely occur.*
- *the compensation of partners relative to new entrants to the audit firm will more likely rise.*

The hypotheses H1, H2, and H3 were used to focus the case investigation at KPMG. The hypotheses are of an explanatory nature. The economics of the audit firm's operation may lead to additional interesting problems. To investigate possible fruitful avenues of audit firm research, some exploratory research questions were drawn.

Every governance system incurs some residual opportunistic behavior. Thus, a relevant question was which mechanisms KPMG employed to control opportunistic behavior in some key decisions. The mechanisms involved in the issuance of audit opinions, the acceptance and dismissal of clients, firm policy and strategy, and the hiring and firing of partners were investigated. Similarly, every reward system has negative aspects. The fashion in which these aspects of the system were resolved at KPMG was subject to research as well.

Thus, theory and predictions were used as explanations of actual choices in the design of control systems and the allocation of decision rights. Hence, the results of this case cannot be used to generalize economic contracting theory, since this would involve formal large sample testing. The case study method was relied upon because the research questions asked dealt with the explanation of the choice of organizational rules of the game of an audit firm. Thus, contemporary events were examined, but the relevant behavior of the subjects could not be controlled. According to Yin (1989), such a question may be dealt with in a case study. The appendix to this paper expands to some degree on the methodology and application of case study research.

## *4. The governance of KPMG -the Netherlands-*

KPMG NV was founded in 1917 by Pieter Klijnveld, an auditor in Amsterdam. Today, the headquarters of KPMG (the Netherlands) are located at Amstelveen. The company has grown from a one-person audit firm to a multi-service organization, which provides auditing services, consultancy, and tax advice. KPMG has long been one of the largest audit and consultancy firms in the Netherlands. It employed 3,693 people in 1994, 308 of which were partners, and had sales of 742 million guilders.[2]
The firm was involved in a major strategic operation at the time of the research. One of the most important aspects of this was the restructuring of the organization into business groups instead of the prevailing disciplinary structure. These groups were auditing, management consulting, corporate finance, edp auditing, Ebbinge, Meijburg, and Brans. Although the focus of this research was on the economic mechanisms at work in an audit firm, attention was given to this restructuring and some of the likely consequences it would induce.

### *4.1 Solving the residual control assignment problem at KPMG.*

*Joint decision-making and majority rules*

The assignment of residual control rights or ownership will be likely to adhere to the rules of partnership governance according to hypothesis 1a, if the brand name investments are sufficiently high. As a Big six firm, KPMG had substantial brand name investments at stake (*cf.* Craswell et al., 1995). As expected, the most senior employees at KPMG were also the owners. In addition, hypothesis 1b suggests that two kinds of decisions should be distinguished. First, the joint decisions on access to and employment of the most important asset (brand name), which are expected to be ruled by unanimity. Second, all other decisions that have to be made jointly, which are expected to be ruled by simple majority.

At KPMG, there was a limited number of decisions governed by a majority rule of 75%. These decisions pertained to the issue of equity (which is similar to the decision to promote someone to partner), the dissolution of the firm, mergers and acquisitions, and changes in the contracts with the partners. All these decisions involved access to KPMG's brand name. Thus, although KPMG did indeed treat these decisions differently from other decisions, it did *not* employ a unanimity rule! Most other decisions that had to be made jointly, for example, the approval of the annual report, the formulation of corporate policy, and the approval of budgets, were subjected to simple majority in accordance with hypothesis 1b.[3]

*Operational decisions and moral hazard: mutual monitoring*

In addition to decisions that have to be made jointly in an audit firm, there are many (operational) decisions auditors make. To make optimal use of the human capital, or specialized knowledge, necessary in audit work decision rights were largely allocated to the individual auditors. Since not all auditors are partners, and are therefore not bonded by the ownership of assets at risk, there is a need to monitor behavior to prevent moral hazard problems. In Section 2.3, it was argued that the owners of the brand name are most likely to perform these monitoring tasks since their incentives coincide with the clients'. Consider the rules for the issuance of audit opinions at KPMG. Audit opinions were the responsibility of the lead partner of the assignment. If the audit fee of an assignment was 50,000 guilders or less, a second CPA (not necessarily a partner) would have to approve of the opinion. At higher fees, a second partner had to be involved. Disagreements between a nonpartner and a partner are resolved by consulting another partner. Hence, an elaborate network of mutual monitoring is established to guarantee quality of work. The most important role is played by the partners in this monitoring network, as predicted by hypothesis 2c.

Monitoring the behavior of all other auditors is costly. Increases in the organization's size are likely to create an incentive to freeride on the monitoring efforts of others (Kandel and Lazear, 1992). It is then likely that a suboptimal level of monitoring will result. According to hypothesis 2a, the larger the organization, the more institutionalized mutual monitoring will become. At KPMG,[4] the institutionalization of mutual monitoring was organized by the establishment of a technical department in the early seventies. The first guidelines this technical department issued dealt with situations in which mutual consultation about audit problems would be required. Moreover, disagreements between two partners were resolved by consulting the technical department. Since the advice of the technical department was usually requisted on only limited details of audits, the lead partner retained the decision rights regarding the complete audit.

Issuing a qualifying opinion required the approval of the technical department, in that case consultation was obligatory.

At KPMG, the technical department has a relatively independent position in the organization. Its decisions can not be overruled by the managerial board. Moreover, its decision rights are quite substantial with regard to maintaining quality. For example, the technical department contains a Quality Control section, which monitors the adherence of auditors to the guidelines of the technical department. By reviewing audit dossiers, and using the results of the review in the performance evaluation of individuals the importance of the guidelines of the technical department was made clear.[5]

*Acceptance and dismissal of clients and moral hazard*

Another important decision in audit firms pertains to the acceptance and dismissal of clients. Partners are evaluated, *inter alia*, on their ability to attract new clients. They have an incentive to accept new clients. Clients differ in terms of the degree of risk they impose on the firm. Owing to the incentive system, partners have a propensity to weigh the degree of risk exposure relatively lightly in their acceptance decision, since the risk is born by all partners of the firm, and the benefits of attracting a new client are attributed only to the partner involved. To control this moral hazard problem, the partners at KPMG who attracted new clients had to have their decision approved by the chairman of their office. If partners and chairman disagreed, they could appeal to the managerial board.[6]

The rules for dismissal of clients are the same. A partner obviously does not have an incentive to dismiss clients. The dismissal right was, therefore, allocated to the regional chairman. The approval of this decision had to be given by the managerial board.[7]

*Corporate strategy decisions and moral hazard*

Large audit firms need to coordinate organizational units and to provide strategic guidance to the members of the firm. The number of partners prevents joint decision-making on day-to-day issues. In other words, a managerial board is needed. Hence, some partners are selected to carry out managerial duties. The management of a large professional service organization requires specific knowledge. Sufficient decision rights are assigned to the managerial board to make optimal use of their specialized knowledge. The tasks of the KPMG's managerial board extend to strategic planning, management of headquarters (central staff), and representative functions. Moreover, 'human resource management' is important. The members of the managerial board are, in addition, engaged in servicing (the largest) clients. Managerial involvement in, essentially, operational tasks is typical of most audit firms. Managers at every level are involved in client service at KPMG.[8]

KPMG adopted an open corporation legal form. All of its shareholders, however, are employees of the firm. The owners of the firm are thus able to scrutinize the behavior of the managerial board. Nevertheless, a moral hazard problem may arise since the consequences of managerial decisions are billed to all other partners. Management has an opportunity to expose the firm to excessive risk without bearing the burden of the consequences.

*Solving moral hazard: separation of decision-management and control*

The conclusion is that key operational and strategic decisions are susceptible to moral hazard. The reason for the likilihood of moral hazard is the separation of decision-making and risk bearing. From an organizational point-of-view, the decision-maker is able to impose excessive risk on the organization. Fama and Jensen (1983a) argued that a reduction in costs associated with the separation between decision-making and risk-bearing can be achieved by separation of decision-management and decision-control rights. Decision rights are then partitioned between different agents. Decision-management rights are the rights to *initiate* and *implement* recommendations for resource allocations. Decision-control rights are the rights to *ratify* initiatives and to *monitor* the implementation of resource commitments.

In this fashion, decision management rights with regard to the acceptance of new clients were decentralized to individual partners, while the decision control rights were assigned to the office chairmen.

It was found that the decision rights that were allocated to the managerial board are decision management rights; the shareholders retained the decision control rights.[9] At KPMG, the shareholders had to approve firm policy and strategy, and the budget annually, the managerial board drew proposals for firm strategy and prepared the budget. Moreover, acquisitions of firms with annual sales exceeding five million guilders had to be approved by the shareholders (residual control right holders), while the managerial board was involved in the selection of suitable take-over candidates (initiation) and the subsequent bidding (implementation). Also, the termination of a partner's contract or changes in contractual stipulations are subject to shareholder approval. Hence, in accordance with hypothesis 2c the owners (partners, shareholders) conduct the decision control or mutual monitoring tasks.

*Managerial hold-up and involvement in client relations*

Managers up to and including the managerial board at KPMG are involved in rendering services to clients. Efficiency might be increased if managers specialized in managerial tasks, this empirical phenomenon therefore needs to be explained. First of all, there is a hold-up problem. The performance of managerial duties demands sufficient specialized knowledge of the management of a professional service organization. Individuals have to acquire this knowledge, and have to invest in a fairly specific asset. Since members of the managerial board are chosen by the shareholders, their appointment to manager is temporarily. If a manager is not reappointed after a period, he may not have had the opportunity to capture the proceeds of his investment. This problem would be aggravated if the manager stopped servicing clients. In that case, he has effectively disinvested in his inalienable asset, human capital. It may be difficult to restart a career as auditor. Managers keep servicing clients in order to alleviate the hold-up problem, which increases the set of alternative employment possibilities (outside options) when the managerial position is terminated.

### 4.2 Performance measurement and rewards systems at KPMG

The role of performance measurement and reward systems is to induce goal congruent behavior. By establishing standards of performance that help to fulfil the organizational goals and strategies, and reward and punish accordingly, individuals have an incentive to behave in a beneficial manner. In discussing reward systems at KPMG,[10] a distinction is made between rewarding partners and other employees. Recall that hypotheses 2b and 3 stated that a sharing system can be expected if mutual monitoring is important and the value of brandname investments is high.

*Rewarding partners*

Rewards are 100% variable at the partner level. KPMG employed a profit point system in which ’profit points’ are allocated annually to individual partners. Subsequently, the points are valued depending on the earnings of the holding (i.e., the consolidated earnings over all branches). The partners are paid according to the amount of profit points that have been allocated to them. The allocation of points is based on seniority, position in the organization, the involvement in major accounts and performance.[11]

The differentiation in payment among partners is fairly moderate. However, a tendency may be noted to accentuate more pay according to performance, and increasing differences in payment. In fact, KPMG was moving towards a marginal productivity incentive system. This implies that systems for measuring a partner’s marginal productivity had to be developed. Furthermore, the marginal productivity approach may hamper cooperation between partners. Also, if not every task is included in the measurement of productivity in a multi-task environment, the effort put into a not-measured task will likely be minimized. Finally, the very reason for which auditors and consultants join a firm, diversification of unsystematic risk, is violated.

The performance measurement at KPMG[12] was based foremost on the annual performance review of partners. This review covered a variety of tasks, including acquisitions (proposal success rate), networking, publications, position on professional boards, client portfolio management, professional knowledge, audit quality, financial

management of client portfolio, management of audit or consultancy team, coaching of team members, behavior towards colleagues and subordinates, and effort. This comprehensive review encompasses the most relevant attributes of the tasks performed by partners. The problem of minimizing effort in unmeasured tasks is, therefore, likely to be small.
In the incentive system, direct measures of performance were preferred. The service rendered towards clients,[13] for example, was measured with a client service evaluation survey. Likewise, the quality of the audit was measured by the internal Quality Control team's reports , and the coaching and guidance of subordinates was measured using a coaching evaluation survey.[14]

Rewarding partners according to their marginal productivity exposes them to unsystematic risk, which would have been effectively foregone if the firm had adopted a sharing incentive system. However, two factors moderated the effects of the marginal productivity approach. First, the payment to partners depended not only on their marginal productivity, but also on the performance of the holding. The value of a profit point depends on the earnings of the holding. If the marginal productivity of a single partner is meager, and consequently, the number of profit points allocated to that individual relatively low, the payment will still not shift as wildly as it might have if the partner had operated autonomously in the market, since the drop in profit points may be compensated by an increase in the value of each point.
Second, the performance review of partners included an evaluation of a partner's client portfolio. The size of clients, the developments in the industry in which a partner's clients operate, changes in the apex of the client's organization, as well as other aspects, were considered in determinating a partner's performance. Thus, if an auditors works in a difficult market, below average results will not automatically lead to fewer profit points.

The marginal productivity incentive system does enhance cooperation between partners. Inherently, a marginal productivity incentive system induces partners to increase their own marginal productivity, not the marginal productivity of the firm as a whole. In a multi-service organization, the potential benefits of referring clients to other parts of the firm are large. In a marginal productivity system, an auditor who encounters a tax problem, has an incentive to try to solve it himself, instead of referring it to the specialized tax department of the firm.

One of the reasons that audit firms provide management consulting services might be that auditors have a long-lasting relation with a client and are the first to be consulted if problems arise. Audit firms with a consulting branch effectively capitalize on the relation an auditor has with its client. At KPMG,[15] for example, it is estimated that 60% of the Corporate Finance group's work is the result of referrals from auditors. However, these benefits of the auditor-client relation can only be captured if the auditor is willing to refer his clients to specialized parts of the audit firm. This willingness is likely to depend on the reward or incentive system. The sharing incentive system facilitates referrals; the marginal productivity approach does not.

Two provisions have to be made. Firstly, the reward of partners was based on **holding earnings**. The payment to partners will increase, ceteris paribus, if the earnings of other disciplines rise. Therefore, referrals contributed (indirectly) to a partner's payment. However, the marginal effect of an additional profit point is likely to outweigh the marginal effect of an increase in profit point *value* owing to the referral of work. The probability of receiving an additional profit point, increases by not referring clients to other partners.

Secondly, the performance review incorporated the number of referrals to other partners. Providing substantial referrals is likely to contribute to a positive review. However, this incentive appeared to be weak too. Referrals were just one of many review items.[16]

*Rewarding nonpartners*

The rewards given to nonpartners were substantially less variable at KPMG.[17] A tendency may be noted in which the payments to senior managers and heads of staff departments were made more dependent on annual profits. KPMG employed a profit sharing mechanism for all employees. The senior managers share of profit had recently been made dependent on individual performance. Excellent performance led to a share of 1.5 times the base rate. Meager performance led to 0.5 times the base rate. Moreover, performance is a major factor to determine which manager makes partnership, and for that matter, which junior becomes senior.[18]

The hierarchy of professionals employed at KPMG consisted of five levels:[19] trainee, junior manager, manager, senior manager and partner. To get promoted, an individual had to achieve certain levels of proficiency in core competencies of the audit or consultancy business. At the first two levels (trainee and junior manager), most attention was payed to the adoption of academic and professional skills; the individual should be able to operate as an independent auditor or consultant in the market. The focus was on the ability to manage teams of professionals and to form effective relations with clients at the manager and senior manager level. At the partner level, the focus seemed to be on the ability to acquire new clients and keep effective relations with existing clients. It appeared that at lower hierarchical levels of KPMG, to invest in human capital was considered paramount. Individuals are acquiring the general skills necessary to become a professional in their field.

KPMG adopted a strict up-or-out promotion policy, especially in the audit branch.[20] This policy implied that individuals who are not promoted to a next level in the hierarchy had to leave the organization. The autonomous growth of labor costs is kept in check this way. Owing to the seniority effect, labor costs are increasing annually even if individuals have not been promoted. If individuals who have not been promoted are obliged to leave the organization, this seniority effect in labor costs will be mitigated. More importantly, if the audit market does not allow a substantial annual increase in personnel, the total number of positions at each hierarchical level will be fixed. If people who do not get promoted are allowed to stay in the organization, they will effectively block the way up for individuals at lower levels of the hierarchy. In order to make it possible to promote individuals at one level, employees at the next-higher level have to be promoted or have to leave. Since the critical assumption in this analysis is the fixed number of positions at each hierarchical level, it is expected that an up-or-out policy is only adopted in parts of the organization which face non-growth markets or parts that are unable to capture a piece of the market growth. This may be an explanation as to why the audit branch of KPMG has adopted the up-or-out policy strictly, and why the management consultancy branch employed it only to a moderate degree. The audit market is mature, as the consultancy market seems to be still growing.

To sum up, hypothesis 3 suggested that in audit firms with high investments in brand name capital, a sharing reward system is more likely to occur. The case evidence indicates that KPMG is currently in transition from a sharing towards a marginal contribution system. This, in turn, suggests that the importance of brand name investments is decreasing. In the final section of this paper, this implication will be commented on further.

### *4.3 Investing in industry-specific knowledge: towards business groups at KPMG*[21]

At the time of the research, KPMG was involved in a major strategic operation in which one of the most salient aspects concerned a restructuring of the company in business groups. Inherently, a restructuring of an organization involves a reallocation of decision rights, and since organization structure has to fit the performance evaluation and reward system, the latter is to change too.

KPMG[22] was regrouping audit, management consulting, and tax activities in business groups. Nine such groups were planned each consisting of industry-specialists from auditing, management consultancy, and taxes. Business group were formed in Manufacturing Industry, Financial and Professional Service Industry, Government, and the Transport Industry in 1995.

The largest clients of each industry were served by the business group. The idea was that thus industry-specific information is bundled and made available to other parts of KPMG, which serve smaller clients in an industry.

Especially for the audit part of KPMG, the business group approach had been a major change. Formerly, the auditors were organized according to geographical areas. Then, only the smaller clients were served by the regional offices, while the large clients were dealt with in the multidisciplinary business groups.

Partners at KPMG have little incentive to cooperate and to refer clients to specialized parts of the firm to cope better with their problems. Since the business groups incorporate consulting, tax, and auditing, the cooperation might be enhanced. Moreover, since the business groups are responsible for both sales and profit, and are rewarded accordingly, agents now have an incentive to work together. If rewards are based on the contribution to the results of a business group, the adverse effects of a marginal productivity approach will be mitigated. Thus, the negative aspects of the marginal productivity reward system are mitigated to some extent by changing the organizational structure. Still, several problems remained. For example, professionals had to specialize in a industry. This specific investment may cause a hold-up problem. Moreover, if professionals in a business group are rewarded on the performance of their group, their pay will become subject to unsystematic risk.
In Section 2.5, it was argued that the very reason for agents to join a firm is to be shielded against unsystematic risk of their income. A firm will provide such a shield if it supplies sufficient markets. By structuring the firm in business groups, and subsequently rewarding professionals based on the performance of their own group exposes them once more to unsystematic risk. One way around this, which is indeed the KPMG method, is to set annual targets for each business group and reward according to the extent to which a target was reached. If a business group faces a market that is in recession, the appropriate target will be lower than if a market is at the top of the business cycle.

It should be noted that in a business groups structure agents have to make investments in specialized knowledge of the industry. Obviously, such investments result in a highly specific asset: the value of this specialized knowledge is reduced substantially if it is used outside the original employment. As a result, the auditor can be held up. Owing to this ex post opportunism, an auditor is more likely to underinvest in specialized knowledge. At KPMG, the partners hold the ownership rights. Therefore, partners had little adverse incentive regarding the investment in specialized knowledge.
However, professionals below the partner level did face a hold-up problem, and thus underinvestment may be expected. KPMG employed only professionals on at least

the manager’s level in the business groups. This is done mainly because the work involved below the manager’s level is fairly standardized. It is therefore not efficient to restrict those professionals to one business group.

## *5. Conclusions*

Two discrete governance systems were analyzed with regard to their appropriateness to audit firms: partnership and conventional firm. These governance systems can also be seen as systems of attributes which differ on aspects such as worker ownership of assets, metering costs, performance based rewards, multiplicity of tasks, and asset complementarity. It was argued that the nature of the main assets employed in audit firms (human capital and brand name), is best served by partnership governance. The likelihood of partnership governance will increase if the value of brand investments is high. Partnership governance is, in addition, best served by employing a unanimity rule in joint decisions on the access to the main asset: brand name.
Performance-based rewards were said to be strongly complementary to partnership governance. However, owing to the prominence of the asset ’brand name’, and the accompanying weight attached to mutual monitoring, a sharing reward system was predicted to prevail in audit firms. Mutual monitoring would furthermore be expected to be enhanced by institutional arrangements, especially if audit firm size was increased.

The empirical evidence showed two somewhat surprising results. First, the unanimity rule was not applied, although the joint decisions pertaining to the access to and employment of the main assets required a majority vote of over 75%, instead of a simple majority. Second, KPMG seemed to abandon the sharing reward system in favor of a marginal contribution system. Both the sharing system as well as the unanimity rule promote protection of the brand name investment. Also, these mechanisms alleviate the hold-up problem concerning these investments. One could conclude that the value of brand name investments is decreasing. This, in turn, suggests that the uncertainty in the audit market about the quality of service is decreasing. It is probably not wise to speculate on the more general meaning of the findings of just one case. However, at KPMG, but also in the audit profession as a whole, there is some concern about a tendency to standardize the audit in such fashion that it becomes less of a service and more of a ’commodity’. If the audit is indeed a standardized product, quality uncertainty will almost certainly become lessened.

The other way in which a reduction in quality uncertainty might have been achieved is the increasing in-house knowledge about auditing in companies. If clients grow increasingly more sophisticated about audits, for example, because they employ an internal audit department, they will have less trouble inferring the quality of an audit firm (see also, Carr and Mathewson, 1990).

The conclusion may be drawn that the incomplete contracting literature offered an interesting perspective on the economic mechanisms underlying audit firm organization. The explanatory value of the incomplete contracting theory was high in this case.

To provide a relatively complete picture of audit firm organization, some exploratory research questions were answered. These questions pertained to the control of residual opportunistic behavior in key decisions and to the workings of the incentive system. The description of the fashion in which KPMG was organized suggested that incomplete contracting theory also offers an explanation for the issues explored in the case study.

It seems that a subsequent avenue in audit firm research should be to test incomplete contracting theory in a more generalizable way.

*Notes*

. In autonomous adaptation, prices serve as sufficient statistics in response to which individual participants are able to take the right action. Cooperative adaptation relies on conscious, deliberate and purposeful efforts to craft adaptive internal coordinating mechanisms (Williamson, 1993).

. Source: annual report KPMG 1994.

. Statutes KPMG Holding N.V. 12/30/1994.

. Interview with Buisman on 7/24/1995.

. Interview with Buisman on 7/24/95 and Van der Veer on 7/19/1995.

. Interview with Buisman on 7/24/1995.

. Interview with Buisman on 7/24/1995.

. Interview with Van Tilburg on 8/16/1995, Van der Veer on 7/19/1995, and Mul on 7/21/1995.

. Interview with Van Tilburg on 8/16/1995.

. Interview with Mul on 7/21/1995.

. KPMG internal document: GWE/CvdV/MvdL/jvk and GWE/Ia/jvk.

. KPMG internal document: GWE/Ia/jvk.

. Interview with Both on 7/21/1995.

. Interview with Mul on 7/21/1995.

. Interview with Van Rooyen on 8/16/1995.

. An internal survey at KPMG, however, indicated that only 10% of the employees held the opinion that not every opportunity is taken to refer clients to other parts and services of KPMG. On the other hand, 30% of the employees stated that at KPMG parochial interests often pervail over KPMG interests. Source: ISR 1995, Toward a class of its own. A survey at KPMG.

. Interview with Mul on 7/21/1995.

. Still, only 26% of KPMG's employees believed that rewards are sufficiently related to performance. Source: IRS 1995, Toward a class of its own. A survey at KPMG.

. Internal document KPMG: Human Resource Management at KPMG The Netherlands (in Dutch), no date.

. Interview with Mul on 7/21/1995.

. This section is based foremost on interviews with Both on 7/21/1995, Mul on 7/21/-1995, Van der Veer on 7/19/1995, and Van Tilburg on 8/16/1995.

. Internal document KPMG: RvB 95-114a.

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*Appendix: Some notes on case study research methodology.*

The quality of a case study research design may be judged on four criteria: construct validity, internal validity, external validity and reliability (Yin, 1989). Below, this study's design is outlined using these criteria.
The *construct validity* criterium pertains to the collection of evidence. There are three principles which are important in this regard: the use of multiple sources of evidence; review of the draft of the case study report by key informants, and the maintenance of a chain of evidence.
Three sources of evidence were used: documentation, archival records and interviews. The documentation and archival records consisted of the annual reports of KPMG 1990-1995, the internal bulletin of KPMG, *Accolade,* 1991, 1992 and 1995, organization charts, statutes and bylaws, several internal documents on organizational structure, strategy processes, performance measurement and human resource management. In addition, articles in the financial press were used, especially on the subject of KPMG legal structure transition from a partnership to a corporation. KPMG's 75th anniversary jubilee book provided information on the organization history. Additional background, especially on KPMG's international operations was provided by Cypert (1991).
The interviews took the form of focused interviews (Yin, 1989, p.89), i.e., the interviews were open-ended and had a conversational character. The questions were derived from the case study protocol (see, *reliability*). A major purpose of the interviews was to corroborate certain facts that were suggested by the (internal) documentation. Moreover, opinions on the changes in the organizational rules of the game were solicited. The key informants were suggested by KPMG's member of the board Kees van Tilburg. This group of informants was subsequently approached to participate in the research. All of the informants who was approached, did participate. Interviews were conducted in the period July - August 1995, and generally lasted about one-and-a-half hours each. The interviews were recorded on tape. The tapes were listened to in a systematic fashion, and summaries were written of the conversations. The questionnaires of the interviews are available from the author. The tapes are, due to confidentiality agreements, not available. The validity of the research was strengthened by applying the criterium of *triangulation*, i.e., only information that was confirmed by at least two other sources was reported. For more details, refer to Figure 6.

All interviewees were sent a draft version of this paper for review. One interviewees actually commented on the draft and the paper was revised accordingly. According to Yin (1989, p. 102) 'a chain of evidence' has to be maintained in a case study report. This implies that the link between the reported conclusions and the derivation of evidence from data sources should be clear to an external observer. In this paper, all derivations from data sources are documented by referring to the documentation and archives involved, or the relevant interviews.

| date | interviewee | position |
|---|---|---|
| 07/18/1995 | J. Pulles | secretary of the board |
| 07/19/1995 | B. van de Veer | chairman auditing |
| 07/21/1995 | W. Mul | director human resources |
| 07/21/1995 | H. Both | director marketing |
| 07/24/1995 | J. Buisman | head technical department auditing |
| 08/16/1995 | J. van Rooyen | chairman corporate finance |
| 08/16/1995 | C. van Tilburg | member of the managerial board |

Figure 6: Interviews with key informants at KPMG the Netherlands, Amstelveen.

*Internal validity* is enhanced by applying the research strategy of pattern matching. Hence, the empirically based pattern was compared to the predicted pattern derived from economic contract theory. If the prediction matched the empirical findings, the theory could be viewed as having explanatory power (Yin, 1989, p. 43).

*External validity* pertains to the generalizability of the case results. External validity has been a major barrier in doing research because case studies rely on analytical generalization in contrast to surveys for example, which rely on statistical generalization. The purpose is to generalize a particular set of results to some broader theory. Such generalization implies replication. It would appear that it is possible to apply economic contract theory in audit research, and more specifically to research on governance issues in audit firms. Furthermore, the research was designed to allow a detailed reconstruction of the method by which it was conducted. Hence, replication of the method is possible. However, no replication of this method to similar issues has been done in the framework of this research and this may have weakened the external validity to some extent. Nevertheless, this research contributes to a growing body of evidence of the applicability of economic contract theory to audit (governance) research. Therefore, the external validity should be judged on its coherence with this economic contract research program.

The final criterium is *reliability*. The reliability of this study was enhanced by applying two strategies. First, a case study protocol was written, which is available from the author. Second, an accessible case study data base was developed. The case study protocol contained the research instrument, i.e., the questionnaires, and also the procedures and general rules that had to be followed in using the instrument (Yin, 1989, p. 70). More precisely, the protocol contained an overview of the case study project (background information, letters of introduction, objectives); field procedures (schedule of data collection activities, procedures for gaining access to informants, introduction to interviews); case study questions (the investigator’s research questions, potential sources of information, sample strategies), and a guide for the case study report (specification of documentation and outline of the report). The case study data base contained all notes taken during the investigation, and the results of the interviews and document analysis. Furthermore, the database included the documents used in this study, and the clippings from the financial press. As mentioned, the database also contained the restricted recordings of the interviews.